

REMARKS

Reconsideration of this application, as amended, is respectfully requested.

Initially, the Applicants would like to thank the Examiner for the indication that claims 7, 9, 13, 15, 20, 22 and 26 are allowed.

In the Official Action, the Examiner again rejects claims 1-6, 10-12, 14, 16-19, 21, 23-25 and 27-32 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent Application Publication No. 2001/0027313 to Shimmura et al., (hereinafter “Shimmura”). Furthermore, the Examiner rejects claims 33 and 34 under 35 U.S.C. § 103(a) as being unpatentable over Shimmura.

In response, Applicants respectfully traverse the Examiner’s rejections under 35 U.S.C. § 102(b) and 103(a) for at least the reasons set forth below.

Claim 1 has been amended to clarify its distinguishing features, namely to recite:

that the distal end portion of the support mechanism is
“adapted to support a medical instrument about a first axis” and
the ball joint supports the supporting mechanism “from
below the supporting mechanism in the direction of gravity to be
...rotatable with respect to the holding portion about a second axis
where the first and second axes are substantially parallel.”

Independent claims 27 and 30 have been similarly amended. The amendment to independent claims 1, 27 and 30 are fully supported in the original disclosure. Thus, no new matter has been entered into the disclosure by way of the amendment to independent claims 1, 27 and 30.

Applicants submit that the ball joint recited in the medical instrument holding apparatus of claims 1, 27 and 30 have substantial advantages over the arrangement disclosed in Shimmura.

A ball joint allows simultaneous inclination and rotation of an arm about a point (center) of the ball. Thus, since the medical instrument using a ball joint can be compact and move smoothly, it is suitable for endoscopic surgery. This is a merit in using the ball joint in the medical instrument.

Shimmura, as shown in FIG. 1 thereof, has a structure for inclination and rotation, in which three axes (Oh, Oi and Oj) intersect. The structure is inevitably large because of its design. Moreover, since the three axes need be connected, the movement of the medical instrument cannot be smooth.

Although, Shimmura does not disclose or suggest the use of such a ball joint, Applicants submit that even if such a ball joint were used in Shimmura, the resulting device would not be capable of the advantages of the medical instrument holding apparatus of claims 1, 27 and 30. The medical instrument holding apparatus of claims 1, 27 and 30 and Shimmura will now be compared on the assumption that a ball joint, instead of the three axes (Oh, Oi and Oj), is applied to Shimmura (see explanatory FIG. B enclosed herewith).

As shown in exemplary FIG. A enclosed herewith, according to the medical instrument holding apparatus of claims 1, 27 and 30, the axis Oj (passing through the center Obj of the ball) of the member α connecting the ball joint 46 and the holding portion 48 and the axis Oa of the endoscope 50 along the insertion direction are substantially parallel to each other. In contrast, according to Shimmura as shown in FIG. B, the axis Oj (passing through

the center Obj of the ball) of the member α connecting the ball joint and the holding portion and the axis Oa of the endoscope along the insertion direction are perpendicular to each other.

Thus, the endoscope 50 is directed downward in the medical instrument holding apparatus of claims 1, 27 and 30, whereas the endoscope is directed laterally in Shimmura.

Further, the holding portion of the medical instrument holding apparatus of claims 1, 27 and 30 extends in a direction perpendicular to the axis Oj, whereas the holding portion of Shimmura extends on the axis Oj.

Such a configuration of the medical instrument holding apparatus of claims 1, 27 and 30 results in substantial advantages not disclosed or contemplated in Shimmura.

According to the medical instrument holding apparatus of claims 1, 27 and 30, to observe the interior wall of an opening in the body with an endoscope, as shown in exemplary FIG. C enclosed herewith, it is necessary to widely rotate the endoscope about the axis Oa extending along the direction of insertion of the endoscope and to move the endoscope in the directions of the three axes (X, Y and Z directions) to move the field of view to a target position. With an oblique-viewing or lateral-viewing endoscope, in particular, such a rotation about the axis is indispensable.

This operation can be carried out, for example, by holding the holding arm 48 to release the brake by means of the switch 60, and rotating the endoscope 50 about the axis Oa while moving the overall medical instrument holding apparatus 10 including the holding arm 48. Thus, the rotation of the endoscope 50 about the axis Oa and the adjustment of the observation position to the target position can be simultaneously carried out by one action. This is realized because the axes Oa and Oj are substantially parallel (see FIG. D).

In contrast, in Shimmura, since the axes Oa and Oj are perpendicular to each other, it is impossible to achieve the above operation because of its structure. The endoscope may be rotated relative to the holding arm about the axis Ca; in this case, however, the field of view can only be rotated about the axis Oa, and cannot be adjusted to the target position. In other words, the endoscope must be moved after being rotated. Thus, at least two actions are required for observation.

As described above, the medical instrument holding apparatus of claims 1, 27 and 30 are advantageous in that the operation can be simple and the time for observation can be reduced.

FIGS. A-D are provided by way of example only to aid the Examiner's understanding of the advantages of the devices of claims 1, 27 and 30 as compared to the device disclosed in Shimmura and not to limit the scope or spirit of the scope of such claims. Furthermore, as such Figures are exemplary, they are not being entered into the Figures of the specification and accordingly are not submitted or designated as replacement sheets.

With regard to the rejection of claims 1-6, 10-12, 14, 16-19, 21, 23-25 and 27-32 under 35 U.S.C. § 102(b), a medical instrument holding apparatus having the features discussed above and as recited in independent claims 1, 27 and 30, is nowhere disclosed in Shimmura. Since it has been decided that "anticipation requires the presence in a single prior art reference, disclosure of each and every element of the claimed invention, arranged as in the claim,"¹ independent claims 1, 27 and 30 are not anticipated by Shimmura. Accordingly, independent claims 1, 27 and 30 patentably distinguish over Shimmura and are allowable.

¹ Lindeman Maschinenfabrik GMBH v. American Hoist and Derrick Company, 730 F.2d 1452, 1458; 221 U.S.P.Q. 481, 485 (Fed. Cir., 1984).

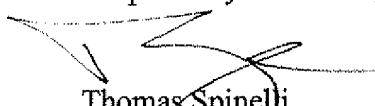
Claims 2-6, 10-12, 14, 16-19, 21, 23-25, 28, 29, 31 and 32 being dependent upon claims 1, 27 and 30, are thus at least allowable therewith.

With regard to the rejection of claims 33 and 34 under 35 U.S.C. § 103(a), since independent claim 30 patentably distinguishes over the prior art and is allowable, claims 33 and 34 are at least allowable therewith because they depend from an allowable base claim.

Lastly, claim 2 has been amended to recite that the switch disposed on the holding portion which is operated by an operator and switches the braking mechanisms to switch the moving and supporting mechanisms between the restrictive state and the permissive state. The amendment to claim 2 is fully supported in the original disclosure. Thus, no new matter has been entered into the disclosure by way of the present amendment to claim 2.

In view of the above, it is respectfully submitted that this application is in condition for allowance. Accordingly, it is respectfully requested that this application be allowed and a Notice of Allowance issued. If the Examiner believes that a telephone conference with Applicants' attorney would be advantageous to the disposition of this case, the Examiner is requested to telephone the undersigned.

Respectfully submitted,



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TS:cm
Enclosure (Exemplary Figures A-D (Not Replacement Sheets))